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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,452	04/16/2001	Karl Reimer	23541-7002	5862

7590 08/14/2003

Rajiv Yadav
McCutchen, Doyle, Brown & Enersen, LLP
Three Embarcadero Center, 28th Floor
San Francisco, CA 94111

EXAMINER

WONG, EDNA

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 08/14/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/836,452

Applicant(s)

REIMER, KARL

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-120 is/are pending in the application.
- 4a) Of the above claim(s) 1-91 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 92-120 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7, 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-91, drawn to an apparatus for preparing a substrate,
classified in class 422, subclass 186+.

II. Claims 92-120, drawn to a method for preparing a substrate,
classified in class 204, subclass 157.15+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Groups II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to sterilize a product.

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Attorney A. Konski on May 19, 2003 a provisional election was made with traverse to prosecute the invention of Group II,

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claims 92-120. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-91 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

~~Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (703) 308-0477. The examiner can normally be reached on Monday-Thursday.~~

~~If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.~~

~~Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.~~

Kishor Mayekar
Primary Examiner
Art Unit 1753

KM
August 6, 2003

Specification

The disclosure is objected to because of the following informalities:

page 14, line 12, reference character "15" has been used to designate both the electro-ionization device power unit and the high voltage alternating current (AC) power supply (from page 10, line 30). It is unclear what reference character "15" designates.

page 15, line 2, reference character "25" has been used to designate both the UV source cooling airflow direction and the ambient air (from page 14, lines 19-20). It is unclear what reference character "25" designates.

page 15, line 4, reference character "19" has been used to designate both an upper exhaust and a negative pressure exhaust system (from page 14, line 23). It is unclear what reference character "19" designates.

page 15, lines 4-5, reference character "18" has been used to designate both an upper duct system and a peripheral ducting (from page 14, line 23). It is unclear what reference character "18" designates.

page 21, line 2, it is unclear what is meant by "polyvinyl iden efl u oride".

page 21, line 4, it is unclear what is meant by "po lyvi nyl".

page 21, line 5, it is unclear what is meant by "polyoxy m ethylene".

page 21, line 9, it is unclear what is meant by "poly (h exam ethylene)".

page 21, lines 14-15, it is unclear what is meant by "polyirn idazo pyrrol ones".

page 22, lines 19-20, it is unclear what is meant by "m ethyltriacetoxysi lane".

page 22, line 20, it is unclear what is meant by "ethyltrimethoxysi lane".

page 22, line 23-24, it is unclear what is meant by "gamm a-ch
lorpprpopylmethyld I methoxysi lane".

page 22, lines 25-26, it is unclear what is meant by "g lycid oxymethyltriethoxys I
lane".

page 22, line 28, it is unclear what is meant by "a lpha-glycidoxy-propyltri
methoxysi lane".

page 22, lines 28-29, it is unclear what is meant by "alpha-g lycid oxyp ro
pyltrieth oxys I lane".

page 22, lines 30-31, it is unclear what is meant by "gamma-glycidoxypropylmethoxydimethoxysilane".

page 22, line 31, it is unclear what is meant by "gamma-glycidoxypropyldimethylethoxysilane".

page 24, line 9, "CHCl₃" should be amended to -- CHCl₃ --.

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims **99 and 100** are objected to because of the following informalities:

Claim 99

line 1, the word "of" should be deleted.

Claim 100

line 1, the word "of" should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim **98, 116 and 117** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 98

lines 1-2, if the electromagnetic radiation *further comprises* infrared radiation, it is unclear what it was comprised of before?

Claim 116

lines 1-2, "the step of exposing the *substrate* to said infra-red radiation source" lacks antecedent basis. The word "substrate" should be amended to the word -- surface -- (see claim 15, line 16).

Claim 117

lines 1-2, "the gas of the first gas stream to be injected over the surface of the substrate exposed to the active zone" lacks antecedent basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

I. Claims **92-114** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Elliott et al.** (US Patent No. 5,669,979).

Elliott teaches a method for preparing a substrate, the method comprising the steps of:

(a) generating an active zone **128** (= reaction zone) using an electromagnetic radiation source **130** (= laser beam = ultraviolet radiation) [col. 3, lines 2-5]; and

(b) exposing said substrate (= small plastic optical fibers) [col. 26, lines 29-45] to said active zone whereby the substrate is modified for adhering a material comprising an adhesive onto said substrate (*inherent or intended use*) by exposure to the active zone (Fig. 6).

The substrate comprises a polymer (= small *plastic* optical fibers) [col. 26, lines 29-45].

The electromagnetic radiation comprises radiation having a wavelength in the range of about 150 nm to 300 nm (= 4 nm to 380 nm) [col. 3, lines 2-4].

The electromagnetic radiation comprises radiation having a wavelength in the range of about 150 nm to 250 nm (= 4 nm to 380 nm) [col. 3, lines 2-4].

The substrate is conveyed through the active zone using a conveyor system whereby the substrate is exposed to the active zone for a residence time (col. 26, lines 56-67; and Fig. 7).

The active zone is evacuated adjacent to the conveyor system (= the reaction product and the fluid may be sucked away from the surface) [col. 2, lines 23-25].

The substrate is exposed to a discharge from an electro-ionization device **126** (= plasma discharge) [col. 12, lines 48-64; and Fig. 6].

The electro-ionization device is located in the active zone (col. 12, lines 48-64; and Fig. 6).

A gas **134** (= input gas) is circulated past said electro-ionization device so that said gas flows over the electro-ionization device onto the substrate (col. 12, lines 48-64; and Fig. 6).

The substrate is exposed to a heating element, wherein the substrate is heated by exposure to said heating element (col. 20, lines 1-10).

A gas **136** (= input gas) is injected over the surface of the substrate exposed to the active zone (col. 12, lines 48-64; and Fig. 6).

The gas to be injected over the surface of the substrate exposed to the active zone is oxygen (col. 1, line 53 to col. 2, line 8).

Elliott does not teach wherein the method is performed at substantially ambient pressure.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Elliott with wherein the method is performed at substantially ambient pressure because the pressure is a result-effective variable and one skilled in the art has the skill to calculate the pressure that would determine the success of the desired reaction to occur, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

Furthermore, Elliott teaches that the atmospheric pressure in the vicinity of the foreign material may be raised or lowered above or below *the ambient* (col. 2, lines 33-35).

As to wherein said substrate comprises a sole of a shoe, wherein said substrate comprises a composite used in aircraft and space vehicle fabrication, wherein said substrate comprises a well-plate, and wherein said well-plate is used for biochemical analysis, Elliott teaches a method relating to the surface cleaning of a wide variety of materials, e.g., semiconductor components and medical instruments (col. 1, lines 14-41; and cols. 23-26). Thus, surface cleaning of a sole of a shoe, a composite used in aircraft and space vehicle fabrication and a well-plate would have been well within the ordinary skill of the artisan because this would have improved their surface free energy for further processing or use.

As to wherein said electromagnetic radiation further comprises infrared radiation, the electromagnetic radiation is a result-effective variable and one skilled in the art has the skill to calculate the radiation that would determine the success of the desired reaction to occur, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

The energy used in the removal of a foreign material depends largely on the type and amount of the foreign material and the need to avoid damaging the substrate.

As to wherein the intensity of said electromagnetic radiation ranges from about 2.0 J/cm^2 to about $5,000 \text{ J/cm}^2$, and wherein the intensity of said electromagnetic radiation ranges from about 10 J/cm^2 to about $1,000 \text{ J/cm}^2$, the intensity of the electromagnetic radiation is a result-effective variable and one skilled in the art has the skill to calculate the intensity that would determine the success of the desired reaction to occur, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

Elliott teaches that energy densities from 500 mJ/cm^2 to 2000 mJ/cm^2 can be applied to a semiconductor wafer without damaging the wafer (col. 8, lines 46-52).

As to wherein the residence time is in the range of from about 0.1 seconds to about 10 seconds, and wherein the residence time is in the range of from about 0.2 seconds to about 5 seconds, the residence time is a result-effective variable and one skilled in the art has the skill to calculate the residence time that would determine the success of the desired reaction to occur, i.e., surface cleaning, absent evidence to the

contrary. MPEP § 2141.03 and § 2144.05(b).

Furthermore, a residence time of from about 0.1 seconds to about 10 seconds and from about 0.2 seconds to about 5 seconds appears to be a mere optimization which solves no stated problems and produces no unexpected results, unless proven otherwise.

As to wherein the conveyor system further comprises a conveyor belt for carrying the substrate, a conveyor belt is commonly used to carry a substrate in a conveyor system. The selection of old parts to operate in new environments in order to achieve the same results was held to have been obvious. *In re Ross* 105 USPQ 237. And the substitution of known equivalent structures was held to have been obvious. *In re Ruff* 118 USPQ 343 (CCPA 1958).

As to wherein the heating element is an infra-red radiation source, the radiation source is a result-effective variable and one skilled in the art has the skill to determine the radiation source that would carry out the heating of the substrate without damaging the substrate.

Furthermore, an infra-red radiation source is commonly used to heat a substrate. The selection of old parts to operate in new environments in order to achieve the same results was held to have been obvious. *In re Ross* 105 USPQ 237. And the substitution of known equivalent structures was held to have been obvious. *In re Ruff* 118 USPQ

343 (CCPA 1958).

As to wherein the step of exposing the substrate to said infra-red radiation source is performed prior to the step of exposing said substrate to the active zone, the transpositioning of varying steps, or varying the details of a process, as by adding a step or splitting one step into two does not avoid obviousness where the processes are substantially identical or equivalent in terms of function, manner and result. *General Foods Corp. v. Perk Foods Co.* (DC NIII 1968) (157 USPQ 14); *Malignani v. Germania Electric Lamp Co.*, 169 F. 299, 301 (D.N.J. 1909); *Matrix Contrast Corp. v. George Kellar*, 34 F.2d 510, 512, 2 USPQ 400, 402-403 (E.D.N.Y 1929); *Hammerschlag Mfg. Co. v. Bancroft*, 32 F. 585, 589 (N.D.III.1887); *Procter & Gamble Mfg. Co. v. Refining*, 135 F.2d 900, 909, 57 USPQ 505, 513-514 (4th Cir. 1943); *Matherson-Selig Co. v. Carl Gorr Color Gard, Inc.*, 154 USPQ 265, 276 (N.D.III.1967).

Furthermore, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946)

II. Claims **115-120** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Elliott et al.** (US Patent No. 5,669,979).

Elliott is as applied for the same reasons as discussed above.

Elliott also teaches injecting a second gas stream **136** (= input gas) over the surface of the substrate (col. 12, lines 48-64; and Fig. 6).

The gas of the first gas stream circulated past said electro-ionization device so that the first gas stream flows past the electro-ionization device and onto the surface is oxygen (col. 1, line 53 to col. 2, line 8; and col. 12, lines 56-57).

The gas of the second gas stream to be injected over the surface of the substrate exposed to the active zone is oxygen (col. 1, line 53 to col. 2, line 8; and col. 12, lines 56-57).

The substrate is comprised of synthetic polymer (= small *plastic* optical fibers) [col. 26, lines 29-45].

Elliott does not teach wherein the substrate is comprised of naturally-occurring polymer.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Elliott with wherein the substrate is comprised of naturally-occurring polymer because Elliott teaches a method relating to the surface cleaning of a wide variety of materials, e.g., semiconductor components and medical instruments (col. 1, lines 14-41; and cols. 23-26). Thus, surface cleaning of a substrate comprised of naturally-occurring polymer would have

been well within the ordinary skill of the artisan because this would have improved its surface free energy for further processing or use.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cates et al. (US Patent No. 5,512,123) is cited to teach a method for improving the capability of a surface of an organic substrate to bond with another material.

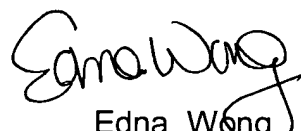
Steen et al. (US Patent No. 4,390,774) is cited to teach a method for treating non-electrically conducting workpieces using a laser.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (703) 308-3818. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-

1495.


Edna Wong
Primary Examiner
Art Unit 1753

EW
August 12, 2003